

What is claimed is:

- 1 1. A chemical dispensing apparatus⁽¹⁰⁾ for use with an air conditioning or heating
2 system to reduce airborne contaminants from the air stream of a conditioned
3 space comprising a chemical supply section including a chemical reservoir and⁽¹⁶⁾
4 a chemical delivery device⁽²²⁾ to store and supply chemical to the contaminated
5 air stream⁽¹⁴⁾ and a dispensing control section including a microprocessor control⁽¹⁸⁾
6 to selectively control the dispensing of chemical to the contaminated air⁽³⁶⁾
7 stream.⁽²⁹⁾⁽¹⁴⁾
- 1 2. The chemical dispensing apparatus⁽¹⁰⁾ of Claim 1 wherein said chemical reservoir⁽²⁰⁾
2 comprises a chemical storage container⁽²⁴⁾ and a chemical feed control.⁽²⁶⁾
- 1 3. The chemical dispensing apparatus⁽¹⁰⁾ of Claim 2 wherein the chemical delivery⁽²²⁾
2 section comprises a chemical dispensing device⁽²⁸⁾ coupled to said chemical
3 storage container⁽²⁴⁾ by a chemical supply conduit⁽²⁷⁾ through a chemical flow⁽³⁰⁾
4 control.
- 1 4. The chemical dispensing apparatus⁽¹⁰⁾ of Claim 3 wherein said chemical flow⁽³⁰⁾
2 control comprises a normally closed flow control valve selectively movable
3 between an open position and a closed position coupled to said dispensing
4 control section⁽¹⁸⁾ by a conductor⁽³²⁾ to receive actuating signals therefrom to
5 selectively move from said normally closed position to said open position to
6 allow the chemical⁽²⁹⁾ to flow from said chemical storage container⁽²⁴⁾ to the air
7 handler.⁽¹²⁾

- 1 5. The chemical dispensing apparatus of Claim 4 wherein said chemical feed ⁽¹⁰⁷⁾ ⁽²⁰⁾ ⁽²⁴⁾ *dispensing*
2 *control* comprises an atomizing nozzle coupled to the chemical storage
3 container.
- 1 6. The chemical dispensing apparatus of Claim 4 wherein said chemical feed ⁽¹⁰⁷⁾ ⁽²⁶⁾
2 control is a check valve.
- 1 7. The chemical dispensing apparatus of Claim 6 further including a blower ⁽¹⁰⁷⁾ ⁽³⁴⁾
2 control to receive control or actuating signals to selectively actuate or
3 energize a blower when chemical is dispensed from said chemical storage ⁽⁵⁶⁷⁾ ⁽²⁹⁾ ⁽²⁴⁾
4 container.
- 1 8. The chemical dispensing apparatus of Claim 7 wherein said blower control ⁽¹⁰⁷⁾ ⁽³⁴⁾
2 includes a transformer and blower control relay box.
- 1 9. The chemical dispensing apparatus of Claim 1 wherein said dispensing control ⁽¹⁰⁷⁾ ⁽¹⁸⁾
2 section comprises a microprocessor control device including a display to ⁽³⁶⁾ ⁽³⁸⁾
3 provide a visual display of the system status.
- 1 10. The chemical dispensing apparatus of Claim 9 wherein said microprocessor ⁽¹⁰⁷⁾ ⁽³⁶⁾
2 control device controls the operating cycle by the frequency of application and
3 duration of dispensing of the chemical.
- 1 11. The chemical dispensing apparatus of Claim 10 wherein said microprocessor ⁽¹⁰⁷⁾ ⁽³⁶⁾
2 control device includes an up control key and a down control key to selectively ⁽⁴⁴⁾ ⁽⁴⁶⁾
3 control said operating cycle.

- 1 12. The chemical dispensing apparatus of Claim 9 wherein said microprocessor
2 control device monitors and records the operation of said chemical dispensing
3 apparatus.
- 1 13. The chemical dispensing apparatus of Claim 9 wherein said microprocessor
2 control device monitors consumption of chemical.
- 1 14. The chemical dispensing apparatus of Claim 13 wherein said microprocessor
2 control devices monitors consumption of chemical through dispensing rate
3 calculations.
- 1 15. The chemical dispensing apparatus of Claim 14 wherein said ^{display}displa includes a
2 display of chemical in said reservoir.
- 1 16. The chemical dispensing apparatus of Claim 13 wherein said microprocessor
2 control devices monitors consumption of chemical through a sensor.
- 1 17. The chemical dispensing apparatus of Claim 16 wherein said ^{display}displa includes a
2 display of chemical in said reservoir.
- 1 18. The chemical dispensing apparatus of Claim 15 wherein the chemical may be
2 manually dispensed by pressing a program mode key and then pressing a
3 manual injection key.